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Docket No. 22956-235 (MIT-5023) (PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Alexander M. Harmon et al.

Application No. 10/729,046

Filed: December 5, 2003

For: VIABLE TISSUE REPAIR IMPLANTS AND

METHODS OF USE

Confirmation No. 9312

Art Unit: 3738

Examiner: Alvin J. Stewart

I hereby certify that this correspondence is being sent electronically via EFS-Web on the date shown below.

Dated: August 23, 2007

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(Chariton Shen)

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INFORMATION DISCLOSURE STATEMENT (IDS)

Dear Sir/Madam:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is being filed after a Request for Continued Examination and after the mailing date of the first Office Action on the merits in the continued examination.

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Applicant has not submitted copies of each cited U.S. patent and U.S. patent application as required by 37 CFR 1.98(a)(2)(i), amended October 2004, as the U.S. Patent and Trademark Office has waived this requirement for all U.S. patent applications. Applicant submits herewith copies of foreign and non-patents in accordance with 37 CFR 1.98(a)(2).

In accordance with 37 CFR 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists. In accordance with 37 CFR 1.97(h), the filing of this Information Disclosure Statement shall not be construed to be an admission that the information cited in the statement is, or is considered to be, material to patentability as defined in § 1.56 (b). It is submitted that the Information Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed references.

The amount of \$180.00 for filing fees is being charged by credit card via EFS-Web, and the Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 141449, under Order No. 22956-235.

Dated: August 23, 2007

Respectfully submitted,

Charlton Shen, Reg. No. 54,442

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5	STATEMENT BY APPLICANT			First Named Inventor	Alexander M. Harmon et al.	
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Sheet	1	of	5	Attorney Docket Number	22956-235 (MIT-5023)	

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Examiner nitials*	Cite No.1	Document Number Number-Kind Code ² (if known	Publication Date MM-DD-YYYY	name of F	Patentee or lited Document	Pages, Columns, Lines, Wh Relevant Passages or Relev
		206,200	07/23/1878	Stewart		Figures Appear
		224,226	02/03/1880	Rind		
		259,260	06/06/1882	Baeyer et al.		
		3,812,017	05/21/1974	Santangelo et al.		
		3,857,932	12/31/1974	Shepard et al.		
		4,520,821	06/04/1985	Schmidt et al.		
		4,553,272	11/19/1985	Mears		
		4,597,766	07/01/1986	Hilal et al.		
		4,609,551	09/02/1986	Caplan et al.		-
		4,801,299	01/31/1989	Brendel et al.		
		4,837,285	06/06/1989	Berg et al.		
		4,902,508	02/20/1990	Badylak et al.		
		5,041,138	08/20/1991	Vacanti et al.		
		5,053,050	10/01/1991	Itay		
		5,061,281	10/29/1991	Mares et al.		
	$\overline{}$	5,078,744	01/07/1992	Chvapil		
		5,108,989	04/28/1992	Amento et al.		
		5,147,400	09/15/1992	Kaplan et al.		
		5,206,023	04/27/1993	Hunziker		
		5,326,357	07/05/1994	Kandel		
		5,366,756	11/22/1994	Chesterfield et al.		
		5,425,766	06/20/1995	Bowald		
		5,443,950	08/22/1995	Naughton et al.		
		5,445,833	08/29/1995	Badylak et al.		
		5,455,041	10/03/1995	Genco et al.		
+		5,480,827	01/02/1996	Guillemin et al.		
		5,514,181	05/07/1996	Light et al.		
		5,577,517	11/26/1996	Bonutti		
		5,612,028	03/18/1997	Sackier et al.		
		5,632,745	05/27/1997	Schwartz		
		5,677,355 5,681,353	10/14/1997	Shalaby et al.		
		,697,976	10/28/1997	Li et al.		
		,709,854	12/16/1997	Chesterfield et al.		
			01/20/1998	Griffith-Cima et al.		
				Gentile et al.		
				Tubo et al.		
			04/07/1998 05/26/1998	Vacanti et al.		
				Whitson et al.		
				Vibe-Hansen et al.		
				Arnold		
				Schwartz et al.		
		000 11		Tubo et al.		
-+			11/03/1998 11/17/1998	Yokota et al.		
		0.10		Mueller et al.		
miner			20111330	Naughton et al.		
ature	/	Alvin Stewart/			Date	03/20/2008

PTO/SB/08a/b (08-03)
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Substitute for form 1449A/B/PTO				Complete if Known		
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	(Use as many sheets as necessary)			Examiner Name	Alvin J. Stewart	
Sheet	2	of	5	Attorney Docket Number	22956-235 (MIT-5023)	

	5,891,558	04/06/1999	Bell et al.	
	5,902,741	05/11/1999	Purchio et al.	
	5,904,717	05/18/1999	Brekke et al.	
 	5,904,716	05/18/1999		
	5,914,121	06/22/1999	Gendler	
	5,922,025		Robey et al.	
	5,964,805	07/13/1999	Hubbard	
	5,968,096	10/12/1999	Stone	
-	5,980,889	10/19/1999	Whitson et al.	
		11/09/1999	Butler et al.	
	5,989,269	11/23/1999	Vibe-Hanen et al.	
-	5,990,194	11/23/1999	Dunn et al.	
 	5,990,378	11/23/1999	Ellis	
	6,001,352	12/14/1999	Boyan et al.	
ļļ	6,001,394	12/14/1999	Daculsi et al.	
	6,005,161	12/21/1999	Brekke et al.	
	6,072,742	02/22/2000	Lee et al.	
	6,080,579	06/27/2000	Hanley, Jr. et al.	
├ ─	6,096,532	08/01/2000	Armstrong et al.	
 	6,103,255	08/15/2000	Levene et al.	
	6,110,209	08/29/2000	Stone	
	6,120,514	09/19/2000	Vibe-Hansen et al.	
	6,121,042	09/19/2000	Peterson et al.	
	6,123,727	09/26/2000	Vacanti et al.	
	6,132,463	10/17/2000	Lee et al.	
	6,139,578	10/31/2000	Lee et al.	
	6,140,039	10/31/2000	Naughton et al.	
	6,143,293	11/07/2000	Weiss et al.	
	6,153,292	11/28/2000	Bell et al.	
<u> </u>	6,179,872	01/30/2001	Bell et al.	
	6,180,007	01/30/2001	Gentile et al.	
<u></u>	6,183,737	02/06/2001	Zaleske et al.	
	6,187,053	02/13/2001	Minuth	
	6,187,329	02/13/2001	Agrawal et al.	
	6,197,061	03/06/2001	Masuda et al.	
	6,200,606	03/13/2001	Peterson et al.	
	6,214,045	04/10/2001	Corbitt, Jr. et al.	
	6,251,673	06/26/2001	Winkler	
	6,277,151	08/21/2001	Lee et al.	
	6,283,980	09/04/2001	Vibe-Hansen et al.	
	6,287,340	09/11/2001	Altman et al.	
	6,291,240	09/18/2001	Mansbridge et al.	
	6,306,424	10/23/2001	Vyakarnam et al.	
	6,319,712	11/20/2001	Meenen et al.	
	6,331,312	12/18/2001	Lee et al.	
	6,365,149	04/02/2002	Vyakarnam et al.	
	6,378,527	04/30/2002	Hungerford et al	
	6,378,572	04/30/2002	Neubauer et al.	
	6,379,367	04/30/2002	Vibe-Hansen et al.	
		10 00/2002	TIDO FIGHOGIT GLAI.	

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Sheet	3	of	5	Attorney Docket Number	22956-235 (MIT-5023)	

	T			
<u> </u>	6,511,958	01/28/2003	Atkinson et al.	
	6,534,084	03/18/2003	Vyakarnam et al.	
	6,541,024	04/01/2003	Kadiyala et al.	
<u> </u>	6,599,323	07/29/2003	Melican et al.	
L	6,605,294	08/12/2003	Sawhney	
	6,840,962	01/11/2005	Vacanti et al.	
	6,852,330	02/08/2005	Bowman et al.	
	6,884,428	04/26/2005	Binette et al.	
<u></u> _	2001/0014475	08/16/2001	Frondoza et al.	
	2001/0016353	08/23/2001	Janas et al.	
	2001/0023373	09/20/2001	Plouhar et al.	
	2001/0039453	11/08/2001	Gresser et al.	
	2001/0053839	12/20/2001	Noishiki et al.	
	2001/0053353	12/20/2001	Griffith et al.	
	2002/0009805	01/24/2002	Nevo et al.	
	2002/0009806	01/24/2002	Hicks, Jr.	
<u> </u>	2002/022883	02/21/2002	Burg	
	2002/0028192	03/07/2002	Dimitrijevich et al.	
	2002/0029055	03/07/2002	Bonutti	
	2002/0062151	05/23/2002	Altman et al.	
	2002/0082631	06/27/2002	Bonutti	
	2002/0091403	07/11/2002	Bonutti	
	2002/0091406	07/11/2001	Bonutti	
	2002/0099401	07/25/2002	Bonutti	
	2002/0099448	07/25/2002	Hiles et al.	
	2002/0107570	08/08/2002	Sybert et al.	
	2002/0127265	09/12/2002	Bowman et al.	
	2002/0133229	09/19/2002	Laurencin et al.	
	2002/0133235	09/19/2002	Hungerford et al.	
	2002/0176893	11/28/2002	Wironen, et al.	
	2003/0026787	02/06/2003	Fearnot et al.	
	2003/0077311	04/24/2003	Vyakarnam et al.	
	2004/0078077	04/22/2004	Binette et al.	
	2004/0078090	04/22/2004	Binette et al.	
	2005/0113937	05/26/2005	Binette et al.	
				[

		FO	REIGN PATENT	DOCUMENT	'S		
Examiner Initials*	Cite No.1	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (# known)	Publication Date MM-DD-YYYY		of Patentee or of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6
		CA 2,247,158	08/28/1997	Naughton e	t al.		
		DE 198 12 195	09/30/1999	Haft			
		EP 0 274 898	07/20/1988	Hinsch et al			
		EP 0 562 864	09/29/1993	Rosenthal e			
		EP 0 955 024	11/10/1999	Adamkiewic			
		EP 1 027 897	08/16/2000	Isotos BV			_
		EP 1 064 958	01/03/2001	Vyakarnam	et al		
		EP 1 167 517	01/02/2002	de Bruijn	or all		\dashv
Examiner Signature		/Alvin Stewart/		'	Date Considered	03/20/2008	╡

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Approved for use through 07/31/2006. OMB 0651-0031
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Sub	Substitute for form 1449A/B/PTO			Complete if Known		
				Application Number	10/729,046	
11	NFORMATIC	N DISC	LOSURE	Filing Date	December 5, 2003	
S	TATEMENT	BY AP	PLICANT	First Named Inventor Alexander M. Harmon et al.		
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	(Use as many	sheets as nec	essary)	Examiner Name	Alvin J. Stewart	
Sheet	4	of	5	Attorney Docket Number	22956-235 (MIT-5023)	

EP 1 216 718	06/26/2002	Ethicon, Inc.	
 EP 1 348 451	10/01/2003	Ethicon, Inc.	
EP 1 410 811	04/21/2004	Ethicon, Inc.	
EP 1 506 790	02/16/2005	Depuy Mitek, Inc.	
WO 86/00533	01/30/1986	Leenslag et al.	
WO 95/33821	12/14/1995	Purchio et al.	
WO 97/30662	08/28/1997	Naughton et al.	
WO 97/46665	12/11/1997	Rieser et al.	
WO 98/48860	11/05/1998	Jahoda et al.	
 WO 99/16381	04/08/1999	Tripp et al.	*
WO 99/47097	09/23/1999	Haft	
WO 00/74741	12/14/2000	Universitaetslinikum Freiburg	
WO 01/15753	03/08/2001	IDM Immuno-Designed Molecules	
WO 01/85226	11/15/2001	Massachusetts Institute of Technology	
WO 03/017826	03/06/2003	Regeneration Technologies	

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		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
		ALBRECHT et al., "Closure of Osteochondral Lesions Using Chondral Fragments and Fibrin Adhesive," <i>Arch. Orthop. Trauma Surg.</i> 101: 213-217 (1983).	
		CATERSON EJ., et al. "Three-Dimensional Cartilage Formation by Bone Marrow-Derived Cells Seeded in Polylactide/Alginate Amalgam," <i>J Biomed Mater Res.</i> 57(3):394-403 (2001) *(Abstract Only).	
		DEUEL, T. et al., "Growth Factors in Principles of Tissue Engineering," Second Edition, Academic Press pp. 129-141 (2000).	
		European Search Report, for EP 03 25 6522, mailed February 24, 2004.	
		FRENKEL, S, Ph.D. and Paul E. Di Cesare, M.D., "Degradation and Repair of Articular Cartilage," Frontiers in Bioscience, 4 th ed., pp. 671-685, pgs 1-32 (October 15, 1999).	•
		GOOCH, K. et al., "Mechanical Forces and Growth Factors Utilized in Tissue Engineering," Pergamon Chapter II.3, pp. 61-82 (1998).	
		GRIGOLO, B., et al. "Transplantation of Chondrocytes Seeded on a Hyaluronan Derivative (hyaff-11) into Cartilage Defects in Rabbits," <i>Biomaterials</i> 22(17):2417-2424 (2001) *(Abstract Only).	
		HUTMACHER DW., "Scaffold Design and Fabrication Technologies for Engineering Tissues-State of the Art and Future Prospectives", <i>J Biomater Sci Polym Ed</i> , 12(1):107-124 (2001) *(Abstract Only).	
		HUTMACHER DW., "Scaffolds in Tissue Engineering Bone and Cartilage", <i>Biomaterials</i> , 21(24):2529-2543 (2000) *(Abstract Only).	

Examiner Signature	/Alvin Stewart/	Date Considered	03/20/2008
			<u> </u>

PTO/SB/08a/b (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
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STATEMENT BY APPLICANT			APPLICANT	First Named Inventor	Alexander M. Harmon et al.	
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(Use as many sheets as necessary)			necessary)	Examiner Name	Alvin J. Stewart	
Sheet	5	of	5	Attorney Docket Number	22956-235 (MIT-5023)	

IBARRA, C. M.D. et al. "Tissue-Engineered Meniscus Cells and Matrix", Tissue	
Engineering in Orthopedic Surgery 31(3):411-418 (July 2000).	
KOSKI, J. M.D. et al., "Meniscal Injury and Repair", Orthopedic Clinics of North American, 31(3):419-435 (July 2000).	
KOSKI, J. M.D. et al., "Tissue-Engineered Ligament – Cells, Matrix, and Growth Factors" Tissue Engineering in Orthopedic Surgery, 31(3):437-452 (July 2000).	
MURRAY, M., et al. "The Migration of Cells from the Ruptured Human Anterior Cruciate Ligament into Collagen-Glycosaminoglycan Regeneration Templates in Vitro," Biomaterials 22:2393-2402 (2001).	
RADICE, M. "Hyaluronan-Based Biopolymers as delivery vehicles for Bone-Marrow- Derived Mesenchymal Progenitors", <i>J Biomed Mater Res.</i> 50(2):101-9 (2000) *(Abstract Only).	
SAMPATH, T. K., et al. "In Vitro Transformation of Mesenchymal Cells Derived From Embryonic Muscle Into Cartilage In Response to Extracellular Matrix Components of Bone," <i>Proceedings of the National Academy of Science of the USA</i> , 81(1): 3419-3423 (June 1984).	
SCHREIBER RE., et al. "A Method for Tissue Engineering of cartilage by Cell Seeding on Bioresorbable Scaffolds," <i>Ann NY Acad Sci.</i> 875:394-404 (1999) *(Abstract Only).	
STONE, K. et al. "Meniscal Regeneration with Copolymeric Collagen Scaffolds," American Journal of Sports Medicine 20(2):104-111 (1992).	
VAN SUSANTE JLC, et al. "Linkage of Chondroitin-Sulfate to Type I Collagen Scaffolds Stimulates the Bioactivity of Seeded Chondrocytes in Vitro", <i>Biomaterials</i> 22(17):2359-2369 (2001) *(Abstract Only).	
2509 (2001) (Abstract Only).	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Signature	/Alvin Stewart/	Considered	03/20/2000

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